

## **ABSTRACT**

**BACKGROUND AND OBJECTIVES:** Nearly two third of the population show nodules in high resolution ultrasound of thyroid. Most of the nodules are benign. Less than 10% of nodules are malignant. The reporting of such nodules is vague, subjective and does not guide the clinician for the next step. To standardize the reporting, the concept of thyroid imaging reporting and data system (TIRADS) was first developed in 2009, on the lines of popular Breast Imaging Reporting And Data System (BIRADS). The present study aims to objectively stratify the thyroid nodules based on key ultrasound features into various risk groups and compare the ultrasound features of suspicious nodules with their Fine Needle Aspiration Cytology (FNAC) results.

**METHODOLOGY:** This short term prospective study has been done in 200 patients presenting with thyroid nodules to Coimbatore Medical College Hospital, Coimbatore during the study period June 2014 – July 2015. These thyroid nodules were evaluated by ultrasonography for suspicious sonographic features for malignancy and also by FNAC. Then the sonographic features and FNAC results were compared and analysed.

**RESULTS:** Out of the 200 thyroid nodules 140 nodules are included in TIRADS category 3. TIRADS category 4a, 4b, 5 have 12, 40, 8 thyroid nodules respectively. But only the TIRADS category 4a, 4b and 5 have malignant thyroid nodules. Odds ratio for Irregular Margin, Microlobulated Margin,

Taller-than-wider shape, Microcalcification, Marked Hypoechogenicity is 1.71, 24, 19.4, 20.35 and 47 respectively.

**CONCLUSION:** The sonographic features like Irregular Margin, Microlobulated Margin, Taller-than-wider shape, Microcalcification and Marked Hypoechogenicity carries increased risk of thyroid malignancy and the fine needle aspiration cytology is required only for the nodules which are included in TIRADS category 4a, 4b and 5.

**KEY WORDS:** TIRADS, thyroid nodules, ultrasonography, fine needle aspiration cytology.